DOCUMENT RESUME

ED 459 718 IR 058 212

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TITLE Journals and the Shaping of Disciplinary Knowledge.
PUB DATE 2001-08-00
NOTE 8p.; In: Libraries and Librarians: Making a Difference in the Knowledge Age. Council and General Conference: Conference Programme and Proceedings (67th, Boston, MA, August 16-25, 2001); see IR 058 199.
AVAILABLE FROM For full text: http://www.ifla.org.
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Authors; Citation Analysis; *Citations (References); *Information Science; *Journal Articles; Libraries; Scholarly Communication; *Scholarly Journals
IDENTIFIERS *Information Science Research; *Knowledge Development; Library Journals

ABSTRACT

This paper addresses two key issues related to the disciplinary role of journals in library and information science (LIS). The first issue is the nature of knowledge as communicated through public mechanisms such as journals. The second issue is the set of attributes that characterizes a portion of the content of LIS journals. In order to complete this examination, a group of LIS journals with an explicitly international focus were examined. The central purpose of the study was two-fold: describing some characteristics of the authors of journal articles in LIS; and studying citations within journal articles to determine apparent epistemic links between the articles' content and the cited works. Results indicate that there are no gross gender-related or geocentric tendencies. An openness to various standpoints is also indicated. It is concluded that LIS journals fulfill important knowledge-based responsibilities for the members of the profession. (Contains 13 references and 1 table.) (MES)

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ED 459 718

67th IFLA Council and General Conference August 16-25, 2001

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Code Number: 023-111-E
Division Number: VII
Professional Group: Library and Information Science Journals
Joint Meeting with: -
Meeting Number: 111
Simultaneous Interpretation: -

Journals and the Shaping of Disciplinary Knowledge

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There appears to be a quite long-standing assumption that journals in scholarly fields are responsible for two functions: 1) they make public the work being done at a particular time in the field (thus reflecting the knowledge base of the field, and 2) they select what is to be communicated in the field (thus shaping the knowledge base of the field). While it very difficult to determine which of the functions actually describes journals' roles (primarily because of some privacy issues), it seems clear that journals do play an important part in the communication of knowledge in scholarly disciplines. This paper will address a couple of key issues related to the disciplinary role of journals in library and information science (LIS). The first issue is the nature of knowledge as communicated through public mechanisms such as journals. The second issue is the set of attributes that characterizes a portion of the content of LIS journals. In order to complete this examination a group of LIS journals with an explicit international focus will be examined.

Journals and Knowledge

One caveat must be offered at the outset of this investigation. Knowledge, of course, is a complex phenomenon, one which philosophers, sociologists, and others have argued over for years. It is not my intention to resolve disputes regarding what constitutes knowledge in any strict philosophical sense. That said, it is indeed necessary to delve to some degree into how knowledge claims are expressed. To begin with, one complexity of knowledge claims is that they represent a combination (sometimes uneasy) of rhetoric and epistemology. It is recognized by many philosophers that knowledge is grounded in language; so, too, is rhetoric. For a knowledge claim to be accepted by others, it is usually necessary that the expression of the claim be, not merely, acceptable to readers and hearers, but persuasive. Knowledge claims that are part of the

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content of journals persuade through logical argument, testimony, empirical evidence, and other means. The combination of rhetoric and epistemology suggests that there is a social element that is part of the expression of knowledge via outlets such as journals.

It is here that a substantial challenge arises. One the one hand, if the social aspect of knowledge is emphasized (or overemphasized), then one might conclude, as Shapin and Schaffer do, that "it is ourselves and not reality that is responsible for what we know. Knowledge as much as the state is the product of human action" (Shapin and Schaffer, 1985, p. 344). This stance denies that there is any foundation to knowledge apart from the perceptions of humans. The paths that knowledge have taken over time suggest that there is a more fundamental phenomenon that guides exploration, evidence, and expression. Time does not allow a complete excursus into epistemological grounding; suffice it to say that I find Haack's conclusion more palatable. She writes, "Standards of evidence are not hopelessly culture-bound, though judgements of justification are always perspectival. And we can have, not proof for thinking that our criteria of justification are truth-guaranteeing, but reasons for thinking that, if any truth-indication is available to us, they are truth-indicative" (Haack, 1995, p. 222). This position does not deny social aspects of knowledge growth and, perhaps especially, knowledge expression; rather, it seeks to unite social processes of knowledge building with the world we investigate through the perspectives of our disciplines.

The knowledge claims that form an important part of journals' content tend to reflect the dual social/realist nature of knowledge. Kornblith helps us understand this nature: "Knowledge is a natural phenomenon. It involves an interaction between human beings and the world around us. . . . . Were the world wholly unstructured, it could not be known by creatures of any sort. . . . By the same token, human psychology must be richly structured as well, and structured in a way which dovetails with the structure of the world" (Kornblith, 1994, pp. 94-96). An essential element of the stance that I am articulating now is the denial of pure constructivism—the claim that all knowledge is nothing more than an individual construction based on individual perception. Simultaneously, I am not adopting a pure realism—the claim that the world is completely objective and our apperceptions of it, including our language and theories, are entirely referential. The middle ground, as I have already mentioned, is complex. It entails Kitcher's admonition that "the main social epistemological project consists in the investigation of the reliability of various types of social processes. Once we have recognized that individuals form beliefs by relying on information supplied by others, there are serious issues about the conditions that should be met if the community is to form a consensus on a particular issue—questions about the division of opinion and of cognitive effort within the community, and issues about the proper attribution of authority" (Kitcher, 1994, p. 114).

Kitcher's statement strikes at the heart of this study. Expressions of knowledge in LIS journals would have little efficacy if there were no indicators of reliability. Reliability, in the context of an examination of LIS journals, can be seen as represented in (at least) two aspects of journal content. One aspect is based in the source of the claim, the "speaker." The authors of journal articles situate their claims within putatively reliable bodies of evidence. The evidence is shaped through perspectival processes that are themselves shaped by some social forces. When the knowledge claims of authors are about social matters (including matters of information organization, information seeking behavior, etc.), the social forces may exert a substantial influence, and may be the objects of investigation. Matters of, for instance, gender and national origin influence the standpoint of the author. As Sandra Harding argues, however, the existence and acknowledgment of standpoint epistemology do not reduce the assessment of knowledge claims to relativism, but they do necessitate a recognition of the social structures of research and

scholarship that may either embrace multiple perspectives on which knowledge claims may be based, or repress certain perspectives in favor of other ones (Harding, 1998).

Another aspect of journal content is attribution. In practical terms attribution is customarily realized through citation. If we limit our scope at this point to assume that authors of journal articles seek the most epistemically sound claims, and if they evaluate those claims according to some measure of reliability, then they will cite previous works that are relevant to their own work and that inform their own knowledge claims. Goldman formulates this assumption in the context of communicating testimony: "First, the communicator must select which of the observed facts to communicate. If she has observed ten truths [accepting that the counting of truths is problematic] but it is not feasible to communicate each of them, she must decide which subset to report. Second, for each of the observed truths, there is the option of reporting it sincerely versus the option of distorting or falsifying it" (Goldman, 1999, p. 104). In light of what Goldman says, we can see citations as testimonial acknowledgement of prior work for reasons that may themselves be complex. Garfield reminds us of at least some of the many reasons writers may have for citing previous work (Garfield, 1965, p. 189); for the purposes of this examination, the possible reasons will be reduced to a couple. One of the reasons, as we will see, is related to Fuller's charge to epistemologists that they be concerned with locating attributions of cognitive authority (Fuller, 1988).

Purpose and Method of the Study

The central purpose of the present study is twofold: 1) describing some characteristics of the authors of journal articles in LIS, and 2) studying citations within journal articles to determine apparent epistemic links between the articles' content and the cited works. The first phase focuses on the gender and the nationality of authors. The second phase entails making an interpretive judgment as to the knowledge-based purpose for an author citing a particular work, based on evidence within the context of the citing article. The citation is categorized as either "epistemic" (indicating that the citing author incorporates something substantive from the cited work) or "procedural" (indicating that there is insufficient textual evidence to discern an epistemic link). Categorization of a citation as "procedural" should not be taken to mean that there is necessarily no epistemic link; it is intended only to signal that there is no clear textual suggestion of such a link. Another aspect of the second phase of analysis is the examination of the subject areas of cited works to determine if authors are building upon work within LIS and/or drawing upon work in other disciplines. The articles examined are taken from the 1999 volume years of five journals that purport to be international in scope: *Library Quarterly*, *Journal of the American Society for Information Science*, *Information Processing & Management*, *Library and Information Science Research*, and *Journal of Documentation* (the 1998 volume year of this journal is examined due to the unavailability of the 1999 volume year).

Time and space do not allow for an extended discussion of citation analysis here. I have addressed the topic elsewhere and will defer to the rationale for the use of the method provided there. At this time I will simply offer one observation from that earlier work: "If the citing author is asserting a knowledge claim in citing specific texts, then there is something that inheres in those cited texts that influences the citing author" (Budd, 1999, p. 269). Fuller also addresses the phenomenon of attribution in epistemic terms. "A producer 'has knowledge' if enough of his fellow producers either devote their recourses to following up his research (even for purposes of refutation) or cite his research as background material for their own. The producer continues to 'have knowledge' only as long as these investments by his fellows pay off for them" (Fuller, 1988, p. 30).

Findings

A total of 75 articles from the five journals were analyzed. (I should emphasize at the outset of this discussion of the findings that what is reported here is a set of indicators based on a descriptive examination of characteristics of authorship and citation. Ultimately I will speculate on the indicators and what they suggest for LIS and for other opportunities for inquiry.) In the 75 articles, 101 authors' genders can be identified (occasional use of initials prevents identification for all authors). Fifty-six of the authors (54.46%) are male; 45 (45.54%) are female. These indicators are a bit complicated by the tendency for professionals in librarianship to be women and for professionals in information science to be men. Since this sample is limited, no conclusions can be reached on a global scale about the gender of authors, although the distribution does not, in itself, indicate patterns of exclusion.

The nation of residence for the authors can also be examined; the residences of 120 authors are available. Since there are numerous nations represented, there is a further bit of reduction here. Authors' residences are divided into US and non-US; again, the sample size will not be sufficient for global conclusions. Sixty-four (53.33%) of the authors reside in the United States. Fifty-six (46.67%) reside in other countries. As is the case with gender, there are some complications with nation of residence. That said, the distribution does indicate that the journals are open to contributions from locations other than the US.

The next phase of investigation focuses on citations. As I mentioned earlier, the decision regarding categorization of citations is an interpretive one. A few examples might help illustrate how the decisions were made. In order for a citation to be categorized as "epistemic," there must be some textual evidence to support a conclusion that an author is incorporating some aspect of the cited work's content into the author's own knowledge claim. The evidence can be seen as either positive or negative. If an author offers a negative citation of a previous work, that can still be taken as affirming the author's claim. More frequently, though, the author is likely to refer positively to previous work. The absence of textual evidence supporting incorporation of previous work into a knowledge claim results in categorization of a citation as "procedural." In the purely epistemological sense, the author may have gained knowledge from that piece of previous work, but the outcome is not evident in the context of the article.

A passage from an article by Hirsch demonstrates textual evidence for support of a knowledge claim. She writes, "This high degree of overlap lends support to the suggestion by Barry and Schamber (1998) that a finite set of relevance criteria exists, despite differences in research methodologies applied, user groups studied, and information environments explored" (Hirsch, 1999, p. 1281). The quotation indicates that Hirsch is corroborating her findings with those of a prior study, thus lending credence to her own work. A passage from another article demonstrates an even more explicitly evaluative usage through citation. Chu writes, "In Freire's view, an illiterate is an individual oppressed within a dominant system rather than a person living on the fringe of a society, a marginal man. This view of 'marginality' was advanced by Silva Simsova, who viewed immigrants as caught between two or more social worlds and considered libraries as one institution to assist immigrants to acculturate in the country of immigration. Although this approach has its own validity, I assume Freire's view of the literacy process as cultural action for freedom" (Chu, 1999, p. 354). The critical nature both of the appropriation and the rebuttal of ideas comes through in this statement.

Categorization of citations as "procedural" tends to be a simpler decision. These kinds of citations are more likely to appear in introductions or literature reviews, and are more likely be nonevaluative mentions of the prior work. For example, McDonough attaches references to

several works to a simple statement: "Many researchers and commentators believe that these new venues are ones in which identity, its construction, and its expression have been subtly (or not so subtly) altered (Allen, 1996; Bruckman, 1992; Curtis, 1992; Reid, 1994; Rheingold, 1993; Turkle, 1995)" (McDonough, 1999, p. 855). Using just one more example to bring home the nature of "procedural" citations, Wiegand states that "In 1893 the library profession was already showing signs of specialization that characterized other professions emerging in the Progressive Era [16-18]" (Wiegand, 1999, p. 5). The numbers in brackets indicate three cited works; their citation, however, provides no evidence of explicit epistemic import. Whenever there was any doubt about the categorization of a particular citation, whenever there was the possibility of interpreting the usage either way, I decided to err in favor of the "epistemic" categorization.

A total of 2,792 citations from the 75 articles could be analyzed. "Epistemic" citations accounted for 656 (23.50%), and "procedural" citations numbered 2,136 (76.50%). These findings are very similar to those of my previous study of citations in articles published in the area of sociology of knowledge. In that study 2,787 citations were examined; 661 were categorized as "epistemic" and 2,126 were "procedural" (Budd, 1999, p. 271). There was some variance in the present study by journal title. Articles in *Library Quarterly* had more citations in the "epistemic" category (46.42%) and articles in *Library and Information Science Research* had the smallest proportion of "epistemic" citations (11.08%). Again, the size of this sample may affect the results.

As a corollary to the examination of citations, I was able to classify the citations according to subject area (that is, the subject of the cited work). Some citations could not be classified (such as some Web sites that embrace many subject areas), but subjects for 2,559 could be identified. It should certainly come as no surprise that LIS is the area most frequently identified. Of the cited works, 1,389 (54.28%) could be classified as LIS. Twenty-two other subject areas were represented by the cited works. Second in frequency was computer science, with 326 citations (12.74%). Distinguishing between LIS and computer science sometimes presented a challenge; a cited work was classified as computer science if there was no apparent direct relationship to the LIS field. Beyond LIS and computer science, no subject area represents as much as four percent of the total number of citations. Table 1 lists the subject areas receiving at least two percent of the citations.

Summing Up

As was mentioned earlier, these data may be considered indicators of particular characteristics of journals' contribution to, and reflection of, knowledge in LIS. With regard to authorship, there is some evidence that there are no gross androcentric tendencies and no gross geocentric tendencies. At least the numbers do not indicate repression based on gender or nation of residence. This kind of study is not designed to examine more deeply the actual representation of standpoint epistemologies, however. It might be possible that, deliberately or accidentally, a limited range of knowledge claims is included in the journals, even as there is apparent diversity of authorship. While this study offers some positive evidence of sensitivity to standpoints, a much closer examination of content would be required to assess the grounding of knowledge claims and the justification offered for both methods and conclusions. The indication here is that there is an openness to various standpoints.

The citation phase of the study is consistent with at least one previous similarly-structured investigation. Explicit epistemic acknowledgement is not altogether common in the citation process. One question not addressed here is the extent to which "procedural" citations represent some sort of implicit epistemic link. It may be that both journal referees and readers of published articles look to these kinds of citations for reasons that are based in part on Fuller's social

epistemological assumption regarding individuals "having knowledge." It could be that readers assess authors "having knowledge" in part according to the citation to previous work that is regarded as having epistemic import. For instance, if I believe that work of writer A on subject X has shown to be epistemologically sound (justified, coherent, foundational, etc.), then I may look to see if writer A's work is cited by writer B on subject X. If there is an absence of citation, I may be tempted to approach writer B's work with greater skepticism than I would if there were citations to writer A. An examination along these lines might help us better understand a phenomenon that has been effectively tacit.

As is the case with authorship characteristics, the subject dispersion of cited works indicates something of an openness to thought and work done beyond the bounds of LIS. In itself, this dispersion does not mean a lot. Combined with an investigation of epistemic grounding of specific claims, including justificatory assessments made regardless of subject area, these indicators may reflect a catholic attitude towards the growth of knowledge. The indicators may also reflect a broad-based foundation for the shaping of knowledge in LIS, through the inclusion of work done in a variety of subject areas. Within the limitations of this study, it appears that there is cause to be sanguine regarding LIS journals fulfilling some important knowledge-based responsibilities for the members of our profession. Further study can help us evaluate such optimism.

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Table 1
Subject areas of Cited Works

Subject	Number	Percentage
LIS	1,389	54.28
Computer Science	326	12.74
Sociology	101	3.95
Education	87	3.40
Science (including physics, chemistry, etc.)	79	3.09
Communication	76	2.97
Business (including management)	66	2.58
Cultural Studies	61	2.38
Philosophy	59	2.31
Health Sciences	52	2.09